

WHAT IS CLAIMED IS:

1. A wireless communication apparatus comprising:

a plurality of fine functional elements each  
5 having communication means for data transmission  
and reception by using radio waves or light and  
one or more means other than the communication  
means; and

10 a base station for controlling and  
collectively managing said fine functional  
elements through communications with said fine  
functional elements,

wherein one or more means other than the  
communication means are activated through  
15 communications of one of said fine functional  
elements received control information from said  
base station with another of said fine functional  
elements via the communication means.

20 2. A wireless communication apparatus  
according to claim 1, wherein each of said fine  
functional elements utilizes, as an energy source  
for activating one or more means other than the  
communication means, power generating means  
25 possessed by the fine functional element or  
energy of radio waves or light sent from said  
base station.

3. A wireless communication apparatus  
according to claim 1, wherein an element for  
realizing the communication means and an element  
for realizing one or more means other than the  
5 communication means are formed on a single  
substrate.

4. A wireless communication apparatus  
according to claim 1, wherein one or more means  
10 other than the communication means include  
imaging means, displaying means, storing means  
and arithmetic processing means.

5. A wireless communication apparatus  
15 according to claim 1, wherein said base station  
transmits the control information to one of said  
fine functional elements which activates one or  
more means other than the communication means in  
accordance with the control information, and  
20 transmits information obtained by one or more  
means other than the communication means to said  
base station, and said base station processes the  
transmitted information.

25 6. A wireless communication apparatus  
according to claim 1, wherein the imaging means  
comprises a fine sphere lens having a partial

flat plane, a parallel flat plate parallel to the  
partial flat plane, and a flat circuit board  
formed with an imaging element and a  
communication circuit to be disposed on the  
5 partial flat plane.

7. A wireless communication method for a  
wireless communication apparatus, the apparatus  
comprising:

10 a plurality of fine functional elements each  
having communication means for data transmission  
and reception by using radio waves or light and  
one or more means other than the communication  
means; and

15 a base station for controlling and  
collectively managing said fine functional  
elements through communications with said fine  
functional elements,

wherein one or more means other than the  
20 communication means are activated through  
communications of one of said fine functional  
elements received control information from said  
base station with another of said fine functional  
elements via the communication means.

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8. A wireless communication method  
according to claim 7, wherein each of said fine

functional elements utilizes, as an energy source  
for activating one or more means other than the  
communication means, power generating means  
possessed by the fine functional element or  
5 energy of radio waves or light sent from said  
base station.

9. A wireless communication apparatus  
comprising:

10 a functional element group including a  
plurality of functional elements each having a  
first function for performing wireless  
communication by using light or radio waves and a  
second function different from the wireless  
15 communication,

wherein the second function of each of the  
functional elements is a single function, and  
said functional element group provides as a whole  
one or more of the second function through a  
20 cooperative work of each of the functional  
elements using the first function.

10. A wireless communication apparatus  
according to claim 9, wherein said functional  
25 element group forms a network system in which the  
wireless communication among the functional  
elements is performed by using the first function.

11. A wireless communication apparatus according to claim 9, wherein the functional elements provide, as the second functions, sensing functions for measuring different types  
5 of physical amounts.

12. A driving method for a wireless communication apparatus, wherein:

the wireless communication apparatus is used  
10 which comprises a functional element group including a plurality of functional elements each having a first function for performing wireless communication by using light or radio waves and a second function different from the wireless  
15 communication;

the second function of each of the functional elements is a single function; and each of the functional elements is disposed at a desired position to provide as a whole one  
20 or more of the second function through a cooperative work of each of the functional elements using the first function.

13. A wireless communication apparatus according to claim 1, wherein:

a base station is provided for collectively managing the functional elements constituting a

functional element group; and  
said base station controls the functional  
element group through the wireless communication  
among the functional elements, or receives data.